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Spaceport News

John F. Kennedy Space Center - America's gateway to the universe

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Kennedy's exploration, innovation will continue

News of a new direction for NASA kicked off a busy workweek for the Kennedy team as they prepare to launch one of the agency's last space shuttle missions.

A couple of hours after the Office of Management and Budget rolled out President Barack Obama's federal budget for fiscal year 2011 on Feb. 1, Center Director Bob Cabana held an All-Hands employee briefing to talk about the future of the center.

"Change brings with it opportunity," Cabana said, "and I think there is a lot of opportunity in this budget request for those of us here at the Kennedy Space Center. We are going to make this work to our advantage."

NASA's new budget includes extending the life of the International Space Station to at least 2020, flying out the five remaining space shuttle missions safely, supporting the commercial spaceflight industry, increasing Earth study missions, expanding green aviation initiatives, and focusing on science and technology education.

"To accomplish these objectives, the president has increased NASA's budget over the next five years by $6 billion, an extraordinary show of support in these tough budgetary times," said NASA Administrator Charlie Bolden.

The budget also includes the cancelation of NASA's Constellation Program.

"To the people who were working on this program, this is like a death in the family. So, you know, everybody needs to understand that, and we need to give them time to grieve and then we need to give them time to recover," Bolden said. "I have an incredible work force of civil servants and civilians. They've been through this before. You know, this is just part of the life of being in NASA.

"This is my life, this is their lives," Bolden continued. "Give them a little time. They'll come back and they are going to be as great as they've always been."

Cabana also expressed his appreciation for the Constellation team. "I couldn't be more proud of the team here at KSC and what we've accomplished on Constellation." He said that the Ares I-X flight was a phenomenal success and that the team has delivered a quality product, on time, and within

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Commercial endeavors

NASA will award about $50 million through the American Recovery and Reinvestment Act of 2009 to support commercial space transportation efforts. Through an open competition, NASA already has entered into Space Act Agreements with five companies:

Blue Origin
The Boeing Company
Paragon Space Development Corp.
Sierra Nevada Corp.
United Launch Alliance

Two companies entered into Space Act Agreements with NASA in 2008 for the development of Commercial Orbital Transportation Services, or COTS, to deliver cargo to the International Space Station after space shuttle retirement:

Orbital Sciences Corp.
SpaceX

NASA/Jim Grossmann

Kennedy Center Director Bob Cabana talks to workers about the future of the center at an All-Hands briefing in the Training Auditorium on Feb. 1, a couple of hours after the Office of Management and Budget rolled out President Barack Obama's federal budget for fiscal year 2011.

Inside this issue . . .

Staff takes pride in astronauts' home away from home

By Linda Herridge
Spaceport News

A team of flight crew support specialists is looking forward to cheering and waving as space shuttle Endeavour's STS-130 crew members exit Kennedy's Operations and Checkout Building, board the Astrovan and head to Launch Complex 39.

Later, many of them will watch as Endeavour lifts off from pad 39A on Feb. 7 at 4:39 a.m. EST. The team's thoughts and good wishes will go out to Commander George Zamka, Pilot Terry Virts, and Mission Specialists Robert Behnken, Nicholas Patrick, Kathryn Hire and Stephen Robinson for a successful mission to the International Space Station. The STS-130 crew will deliver and install the Tranquility node and cupola to the station during a 13-day mission.

Lauren Lunde, with NASA; Judy Hooper, with United Space Alliance; and several others, take care of the astronauts 24/7 in the Astronaut Crew Quarters during preflight training and leading up to all shuttle launches. In this home away from home, they work in shifts, with additional staff called in as needed to help cook and clean.

NASA/Jack Pfaller

Kennedy's Astronaut Crew Quarters staff are prepared for the STS-130 crew members. From left, are Janet McCrary, attendant and cook with United Space Alliance, or USA; Judy Hooper, crew support specialist with USA; Irene Hancock, attendant and cook with USA; and Lauren Lunde, NASA crew support specialist.

"The crew is extremely busy when they come in," Hooper said. "We could not function without all of the group's efforts to take care of the astronauts."

Those who work in the crew quarters include cooks, attendants, flight data file personnel, flight nurses and other astronauts supporting the crew.

Inside an area that dates back to the Apollo Program are facilities that have been upgraded throughout the years, including a kitchen, staff conference room, crew conference room, workout room, lounge, laundry room, computer room, suit-up room, dining room, medical facility, staff office and prime crew sleeping quarters.

Lunde and Hooper said it's their mission to make the astronauts' stay in crew quarters as smooth and enjoyable as possible.

"Their health and well-being are very important," Lunde said. "For this reason, access to crew quarters is limited to the staff and astronaut support personnel leading up to each launch."

Attendants Irene Hancock and Janet McCrary, both with United Space Alliance going on 10 years, are certified food handlers and provide meals for the astronauts and support personnel.

"It feels like family here," Hancock said. "The astronauts share family stories, jokes and laughs with us."

The team's typical day begins at 6 a.m.

They get the kitchen going for breakfast, lunch and dinner. Laundry and inventory are completed. Maintenance trouble calls are tended to, and sleeping quarters and the beach house are cleaned.

According to Hooper, the lights in main rooms are adjustable so that daylight can be simulated during the evening, and vice versa, to coincide with the astronauts' circadian sleep rhythms as they prepare for their mission.

"The lights can be out nearly all day," Hooper said. "The crews can be up at night and asleep during the day."

Hooper said the unique environment working around astronauts who are trained and ready for their missions more than cancels out the challenges of working long shifts, and McCrary said she's really learned a lot about the space program by just being around the astronauts.

Whether the astronauts are here for training or launch, the team keeps tabs on them using a sign-out board.

A quick page or phone call brings the astronauts back to crew quarters if needed.

The staff operates under Johnson Space Center's Health Stabilization Program. Twice yearly, the staff undergoes a physical exam and trains regularly on health issues and crew quarters procedures.

Lunde said, like many of the astronauts before them, the crew quarters team hopes to keep in touch with the STS-130 astronauts long after their mission is complete.

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budget. "You guys have done all the right things, you've done everything that's been asked of you... and I don't want to lose that," he said.

Cabana noted that the work done at Kennedy to support Constellation will be captured, possibly by commercial entities as they begin to develop their own space vehicles.

"There is going to be a real emphasis on accelerating the development of commercial cargo and commercial crew to the International Space Station. We're working on what does that mean to us? What is our role? How do we partner with industries to make them successful?" Cabana said. "We're working on that. We are going to make that happen."

NASA Deputy Administrator Lori Garver said the $1.9 billion investment to modernize Kennedy during the next five years strongly supports a true space launch center of the future.

"We believe this path opens up new markets that would not have existed otherwise," Garver said. "We anticipate many, many more launches out of the Kennedy Space Center that will include our robotics program, a lot of those flagship missions, those Earth sciences missions and then ultimately commercial crew and cargo."

The five-year plan for Kennedy will span to include technology developments, which could be demonstrated in the proposed Exploration Park, robotic precursor missions with the help of NASA's Launch Services Program, and supporting research and development aboard the International Space Station from the center's Space Life Sciences Laboratory.

"We were already working on a basis to support the International Space Station as a National Lab, drawing researchers here to the Kennedy Space Center, developing payloads to fly on ISS, processing those payloads to fly up to ISS," Cabana said. "We want to be a part of that and we've already put initiatives in place to help make that happen."

Cabana said in the coming weeks he and his team will be analyzing the budget to provide more information to the work force, and that the changes made during the past year and a half already have positioned the center for the future.

"Given this budget request and what we have done, it can fit into the framework for the future," Cabana said. He emphasized the changes that we've made to be less program centric and more capability centric, and strengthening an engineering and technology team, fit with this new future.

Cabana also said he understands that change often brings with it anxiety, but that safely flying out the remaining shuttle flights should be top priority at the center.

"Right now, this week especially, we can't have any anxiety. We have one mission this week ... one focus," Cabana said. "What we need to focus on is launching space shuttle Endeavour safely on Sunday."

Delivery of space weather data set to spike with SDO

Solar storms can wreak havoc on power grids, communications systems and delicate satellites. Currently, there's no way to predict severe space weather, but that could change with the heaps of information NASA's Solar Dynamics Observatory, or SDO, will send back to Earth after its scheduled Feb. 9 launch.

"The biggest challenge of this mission was the data rate," said Liz Citrin, SDO project manager at NASA's Goddard Space Flight Center in Greenbelt, Md. "SDO will blast back 1.5 terabytes of information every day.. .that's equivalent to a half-million song downloads. It's unprecedented."

Citrin said there was no way to record that much data on board the spacecraft. Instead, the SDO team designed a mammoth 18-meter radio antenna, as well as a back-up, at White Sands Space Harbor in Las Cruces, N.M., to receive it all. Then, the data will be sent out to scientists at Stanford University in Palo Alto, Calif., the University of Colorado at Boulder, and Lockheed Martin's Solar Astrophysics Lab in Colorado. The National Oceanic and Atmospheric Administration's Space Weather Prediction Center also is expecting to receive quick-look data the moment SDO is operational.

Another pretty cool technology developed by the SDO team to handle the data rate was the use of the Ka band, which recently was put to use for the Lunar Crater Observation and Sensing Satellite, or LCROSS, mission.

SDO has three major instruments on board that will send data back for at least five years, hopefully 10.

Both the Helioseismic and Magnetic Imager, or HMI, and the Atmospheric Imaging Assembly, or AIA, will allow scientists to see the entire disc of the sun in very high resolution -- 4,096 by 4,096 mm CCDs. In comparison, a standard digital camera uses a 7.176 by 5.329 mm CCD sensor.

AIA also will image the outer layer of the sun's atmosphere, while the Extreme ultraviolet Variability Experiment, or EVE, measures its ultraviolet spectrum every 10 seconds, 24 hours a day.

HMI will map the helioseismic and magnetic fields of the sun to understand its interior and magnetic activity.

"Space weather forecasting is in its infancy . . . just like hurricane forecasting was years ago. We built up experience in collecting data, designed models, tested those models, and now look what we can do," said Citrin. "SDO and all of NASA's Living with a Star Program missions will lead to better prediction of space weather."

SDO will travel to its geosynchronous transfer orbit aboard an Atlas V rocket, a trip that's been much anticipated. The mission was supposed to launch in August 2008, but the spacecraft team needed a few more months of test time.

"Atlas manifest challenges resulted in the current launch date in 2010. The mission team has been very patient and we're all happy to be launching now," said Rex Engelhardt, SDO mission manager.

NASA's Launch Services Program, or LSP, began processing SDO for launch in July 2009. Engelhardt said from the first day the team had to consider the spacecraft's high-contamination sensitivity.

Inside the Astrotech Space Operations facility in Titusville, Fla., technicians set up a laminar flow enclosure -- a four-wall clean enclose that blows air in one side and sucks it out the other -- keeping the spacecraft free of dust, particles, dirt and debris.

Another unique aspect of this mission is the rocket itself. Unlike other rockets assembled at the launch pad, Atlas rockets are put together in the Vertical Integration Facility on Launch Complex-41 at Cape Canaveral Air Force Station.

"Everything is protected until rollout, which right now is scheduled for Feb. 8," said Engelhardt. "If we needed to roll back, we perform a few disconnects and roll it back. The pad is just a slab of concrete, so after launch there's no tower to refurbish."

Things are looking good for Engelhardt and his LSP team members, who are ready to kick this year off from their home base. Last year they processed and launched eight missions, three from Vandenberg Air Force Base in California.

"This is guaranteed to be the best launch of the year," Engelhardt said. "And it's scheduled for 10:30 in the morning, so there's no reason to miss it."

"This is guaranteed to be the best launch of the year. And it's scheduled for 10:30 in the morning, so there's no reason to miss it."

Rex Engelhardt,
SDO mission manager

NASA/Jim Grossmann

The second half of an Atlas V payload fairing is moved into position around NASA's Solar Dynamics Observatory, or SDO, at the Astrotech Space Operations facility in Titusville, Fla. SDO is the first mission in NASA's Living With a Star Program, and the data that it sends back to Earth will be used to create better forecasts of space weather needed to protect aircraft, satellites and astronauts living and working in space.

Scenes Around Kennedy Space Center

NASA/Jack Pfaller

The tenth and final segment of a new mobile launcher, or ML, is attached to the top of the 345-foot-tall tower at Kennedy on Jan. 28. Its base is being made lighter than space shuttle mobile launcher platforms so the crawler-transporter can pick up the heavier load of the tower and a taller rocket.

NASA/Amanda Diller

A worker secures a potted kumquat tree to the tenth and final tower segment of the new mobile launcher, or ML, being constructed at Kennedy. The custom of "Topping Out" is a term used to indicate that the final piece of steel is being hoisted into place on a building, bridge or other large structure.

NASA/Kim Shiflett

Center Director Bob Cabana holds the "Big Ticket" for admission to the KSC All-American Picnic, scheduled for March 6 from 10 a.m. to 4 p.m. All civil service, contractors, and Cape Canaveral Air Force Station personnel associated with a NASA program, and their families, are invited to attend. This year marks the 31st anniversary of the picnic, "Celebrating more than three decades of family, food, and fun." Food will be provided by Slow & Low Bar-B-Que, and includes either a traditional barbeque or vegetarian meal. Scheduled events include live entertainment, generation XYZ games, children's games, a car and motorcycle show, the popular chili cook-off, and much more. Tickets go on sale Feb. 17. Prices are $8 for adults and $6 for children ages 3 to 12 (children 3 and younger get in free). Volunteers will receive a discounted ticket of $5 and a baseball cap. To volunteer, call Sandy Walsh at 867-4255. For questions, call Sam Talluto at 867-3092.

NASA/Jim Grossmann

Kathryn Morris hugs Pierre, a pony, during the Child Development Center's "Wild, Wild West" event Jan. 29 at Kennedy Space Center. Kids were able to ride other ponies and meet and greet a pig named Miss Piggy. Kathryn says she was "listening" to Pierre while "giving him a hug."

NASA

Dr. Bob Youngquist, lead for Kennedy's Applied Physics Laboratory, addresses students during the Oklahoma Space Grant Consortium visit Jan. 14 at the Educator Resource Center. Students in science, technology, engineering and mathematics, or STEM, disciplines received first-hand knowledge of the center's mission objectives and possible career opportunities.

Haiti Earthquake Relief

Some Kennedy employees are working together in coordination with the Hospitality Ministry Project of Titusville, Fla., to gather relief supplies for an orphanage in Port-au-Prince, Haiti.

From now until Feb. 26, they will be collecting the following items at Headquarters, Room 1351: first aid supplies, blankets, towels, hygiene products, tents, and dried foods (i.e., beef jerky, granola bars, peanut butter crackers, trail mix, nuts and Meals Ready to Eat).

For more information, call Willie Walker with Abacus Technology Corp. at 321-867-1388.

NASA/Jim Grossmann

Family, friends and co-workers plant an oak tree near Operations and Support Building II on Jan. 19 in memory of Allison Moree. Moree was an environmental worker at Kennedy for several years. She is survived by her husband James, daughter Ashley, and grandson Adam.

NASA/Kim Shiflett

The Kennedy Space Center Visitor's Complex spaceperson greets workers at the Brevard Achievement Center (BAC) in Rockledge, Fla., on Jan. 29. Kennedy Director Bob Cabana awarded a Group Achievement Award to the BAC for the excellent support in the area of public outreach and education programs at Kennedy.

NASA/Jim Grossmann

This Tazzari Italian-designed electric car is one of six electric cars that the NASA Transportation Office put on display Jan. 25 at the Kennedy Learning Institute. Workers got the opportunity to ride and be driven in the alternative-fuel vehicles.

NASA honors heroes with Day of Remembrance

By Steven Siceloff
Spaceport News

NASA marked the passing of those who gave their all in the name of space exploration during a wreath-laying service at the base of the Space Mirror Memorial at Kennedy's Visitor Complex. The service was part of the agency's Day of Remembrance on Jan. 29.

The national memorial to lost members of the NASA family is etched with the names of 24 people who perished during missions or in training since the American space effort began.

"President John F. Kennedy characterized this as the most hazardous, dangerous and the greatest adventure on which man has ever embarked," said Center Director Bob Cabana. "But it's not an adventure without risk. The explorers throughout history have put themselves at risk for the never-ending quest for knowledge that drives us all."

NASA/Kim Shiflett

Kennedy Director Bob Cabana takes a moment on NASA's Day of Remembrance to honor the Apollo 1, Challenger and Columbia crews, as well as other members of the NASA family who lost their lives supporting NASA's mission of exploration.

Surrounded by former astronauts, NASA workers and space enthusiasts, Cabana spoke of the rewards that have come from the sacrifice of those memorialized on the monument.

"We've had our setbacks over the years, but we've always come back stronger, rededicating ourselves to achieving our goal in the safest manner possible," he said.

The Astronauts Memorial Foundation, a not-for-profit organization that funds math and science scholarships, built the memorial in 1991. It has since been designated by Congress as a national memorial.

Cabana was joined in the wreath-laying by Janet Petro, Kennedy's deputy director, and Mark Nappi, United Space Alliance vice president for Launch and Recovery Systems.

The crew members who died in the Apollo 1 fire in 1967, the Challenger explosion in 1986 and Columbia's break-up during re-entry in 2003, are included on the memorial. All three accidents occurred during the last week of January or early February of their respective years.

Others memorialized include test pilots for the X-15 and F-104, as well as four astronauts who were killed while flying T-38s. Another died in a commercial plane crash while on NASA business.

Cabana, who called the astronauts "some of the finest people I've ever had the pleasure of knowing," said the most fitting tribute to their sacrifice is to continue their goals of space exploration safely.

"So as we pause today to remember the sacrifice of those on this mirror, let's rededicate ourselves to safely achieving our goals as we transition to a new era of space exploration," he said. "This is an exciting time and we honor those who have gone before us by continuing our quest for knowledge in this greatest adventure of all time."

STS-129 crew shares mission memories of 'stickage,' football

Having completed a successful mission to the International Space Station, the STS-129 mission crew members returned to Kennedy on Jan. 22 to share personal stories of their picture-perfect journey.

Commander Charlie Hobaugh, Pilot Barry Wilmore, and Mission Specialists Robert Satcher, Michael Foreman, Leland Melvin and Randy Bresnik delivered spare parts to the orbiting laboratory, including a gyroscope.

The mission that featured three spacewalks also highlighted the birth of a baby. Many proud fathers like to celebrate the birth of their child with a cigar -- pink for the girls and blue, of course, for the boys.

On the morning of Nov. 22, 2009, Bresnik was told by the Mission Control Center in Houston that his wife, Rebecca, had given birth to their daughter, Abigail Mae. And when it was time for Bresnik to dole out his pink cigars, he did it the way any astronaut in space would . . . he floated them to his fellow astronauts.

NASA/Kim Shiflett

Commander Charlie Hobaugh, left, Pilot Barry Wilmore, and Mission Specialist Leland Melvin share a few of their STS-129 mission stories with Kennedy workers and students during the Crew Return event Jan. 22 in the Training Auditorium. Also attending, but not shown are, Mission Specialists Robert Satcher, Michael Foreman and Randy Bresnik.

"After my wife, Rebecca, had my daughter, I had to pass out those bubble gum cigars," Bresnik said.

Bresnik, along with Satcher and Wilmore, made their first trips to space.

"The view outside the vehicle is beautiful and there's nothing like seeing it with your own eyes," Wilmore said. "The colors are just so brilliant and indescribable."

When they weren't working to prepare the station for the arrival of the Tranquility node, which will be flown on space shuttle Endeavour's upcoming STS-130 mission, they played in their weightless environment. A video showing the crew playing football got a lot of laughs in Kennedy's Training Auditorium, especially when Melvin took what looked to be a hard hit from Wilmore.

Also during their down time, the astronauts came up with a new form of entertainment called "stickage." Stickage is when water and M&Ms meet in space . . . and it appears as if the M&Ms stick to the water.

The mission began Nov. 16, with a spectacular and on-time launch and ended when shuttle Atlantis touched down on Kennedy's Shuttle Landing Facility on Nov. 27.

The mission returned station crew member Nicole Stott to Earth. Stott is the final NASA astronaut to experience the rotation of launching from and being returned to Earth by a space shuttle. In the future, a Russian Soyuz spacecraft will be used for station crew rotations.

The 11-day flight to deliver spare parts, and other equipment and supplies to the space station was the 31st flight dedicated to space station assembly, resupply and maintenance -- one that should keep the station functioning well into the future.

Remembering Our Heritage: Celebrating Presidents' Day

Visit 50 years ago kicked off presidential presence

This year, Presidents' Day is Feb. 15.

The holiday officially began in 1880 to celebrate George Washington's birthday. Celebrated on the third Monday of February, it now honors Abraham Lincoln and all of those who have served as this nation's president.

President Dwight Eisenhower was the first sitting president to visit the spaceport 50 years ago.

After the death of President John F. Kennedy in 1963, the Launch Operations Center was renamed Kennedy Space Center by Executive Order.

NASA photos compiled by Elaine Liston

Astronaut Neil Armstrong receives the first Congressional Space Medal of Honor from President Jimmy Carter in the Vehicle Assembly Building on Oct. 1, 1978.

President Richard Nixon congratulates the Apollo 12 launch team in Kennedy's Launch Control Center on Nov. 14, 1969. Nixon is the first sitting president to ever attend a launch at Kennedy.

President Dwight Eisenhower visits Cape Canaveral on Feb. 10, 1960, during the Mercury Program. Eisenhower signed the National Aeronautics and Space Act on July 29, 1958, establishing NASA.

President Lyndon Johnson and West German Chancellor Ludwig Erhard tour Kennedy's Vehicle Assembly Building on Sept. 27, 1966.

President John F. Kennedy visited Cape Canaveral on Feb. 23, 1962, to award astronaut John Glenn and Manned Spacecraft Center Director Robert Gilruth the NASA Distinguished Service Medal during a Project Mercury ceremony.

President Bill Clinton and First Lady Hillary Clinton watch the launch of space shuttle Discovery on the STS-95 mission, John Glenn's return to space, on Oct. 29, 1998. Others attending included astronaut Eileen Collins, left, then NASA Administrator Daniel Goldin and Kennedy's current Director Bob Cabana.

NASA Employees of the Month: February

NASA/Tony Gray

Employees of the month for February are, from left: Barbara Naylor, Center Operations; Rebecca Barnett (Employee of the Quarter), Human Resource Office; Michael Masters, Safety and Mission Assurance Directorate; Gregory Katnik, Launch Integration Office; Denton Gibson, Launch Services Program; Robert Brown, Engineering Directorate; William (Keith) Connell, Launch Vehicle Processing Directorate; and Carolyn Bacque, Engineering Directorate. Not pictured are, Elisa Lopez Waller, Chief Financial Office; and Thomas Fornoff, Information Technology and Communications Services.

Upcoming events . . .

Feb. 17	The History of Black Economic Empowerment panel discussion (free) 1:30 to 2:30 p.m. Mission Briefing Room, Operations and Checkout Facility
Feb. 26	African American History Month Breakfast, 8:30 to 10:30 a.m. Space Station Processing Facility cafeteria, tickets $13 (buy by Feb. 17)
March 6	Kennedy All-American Picnic, 10 a.m. to 4 p.m. EDT; KARS 1 Park. Tickets go on sale Feb. 17; $8 for adults, $6 for children ages 3-12.

Looking up and ahead . . .

Planned Feb. 7 Planned Feb. 19	Launch/KSC: Endeavour, STS-130; 4:39 a.m. EST Landing/KSC-Shuttle Landing Facility; 11:13 p.m. EST
No earlier than Feb. 9	Launch/CCAFS: Atlas V, SDO; 10:30 to 11:30 a.m. EST
March 1	Launch/CCAFS: Delta IV, GOES-P; Window 6:19 to 7:19 p.m. EST
No earlier than March 3	Launch/CCAFS: Falcon 9, Window 11 a.m. to 3 p.m. EST
Targeted for March 18	Launch/KSC: Discovery, STS-131; 1:34 p.m. EDT
Targeted for April 19	Launch/CCAFS: Atlas V, OTV; TBD
Targeted for May 13	Launch/CCAFS: Delta IV, GPS IIF-1; 3:19 to 3:37 a.m. EDT
Targeted for May 14	Launch/KSC: Atlantis, STS-132; 2:28 p.m. EDT
Targeted for July 29	Launch/KSC: Endeavour, STS-134; 7:51 a.m. EDT
Targeted for Sept. 16	Launch/KSC: Discovery, STS-133; 11:57 a.m. EDT
No earlier than Nov. 22	Launch/VAFB: Taurus, Glory; TBD
Targeted for December	Launch/CCAFS: Delta IV, GPS IIF-2; TBD
Aug. 5, 2011	Launch/CCAFS: Atlas V, Juno; TBD
Aug. 15, 2011	Launch/Reagan Test Site: Atlas V, NuSTAR; TBD
Sept. 8, 2011	Launch/CCAFS: Delta II Heavy, GRAIL; TBD
To Be Determined	Launch/VAFB: Delta II, Aquarius / SAC-D Satellite; TBD
To Be Determined	Launch/VAFS: Delta II, NPP; TBD
No Earlier Than October 2011	Launch/CCAFS: Atlas V, Mars Science Laboratory; TBD

WORD ON THE STREET

STS-130 is the final scheduled night space shuttle launch. What do you like most about night launches?

"Love them. My family made a special trip to see STS-128 go up and we plan to do the same for STS-130."

Shaun Green, with NASA

"They're so much easier to see. They are very similar to fireworks . . . a celebration of our country."

Loren Lorenz, with Portage Inc.

"I love them. When I work them, I really don't mind staying up all night and going to work the next day."

Larry Batterson, with NASA

"They're so beautiful. I"ve seen a lot of them in my 20 years. They seem so much more dramatic."

Kathie Murr, with United Space Alliance

"Night launches are the best. I love the fact that they turn night into day. It's absolutely beautiful."

Rosaly Santos-Ebaugh, with NASA

John F. Kennedy Space Center

Spaceport News

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